

09/08/99

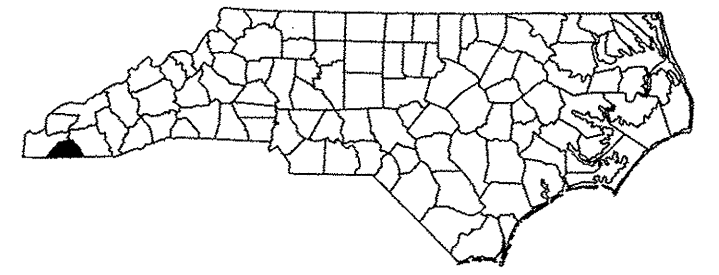
T.I.P. NO.	SHEET NO.
B-4733	UC-1

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

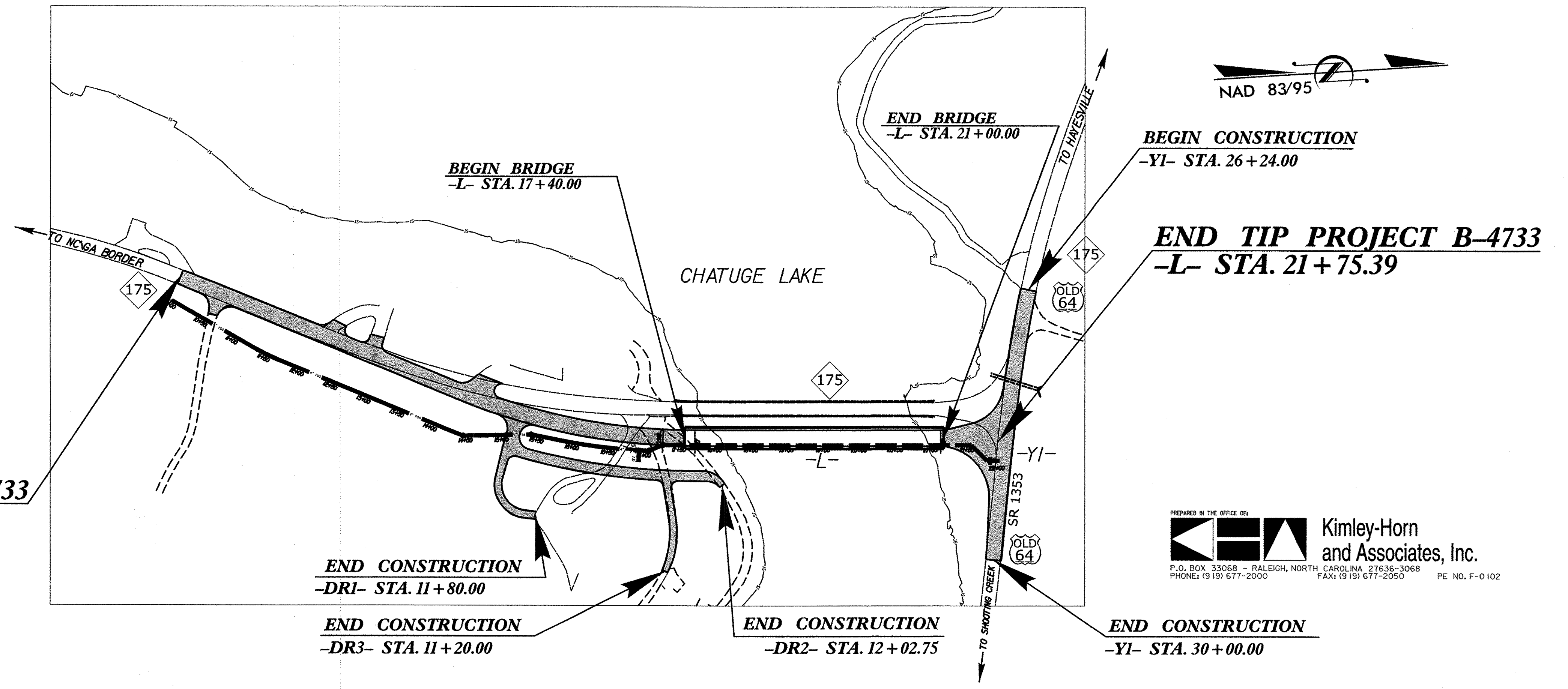
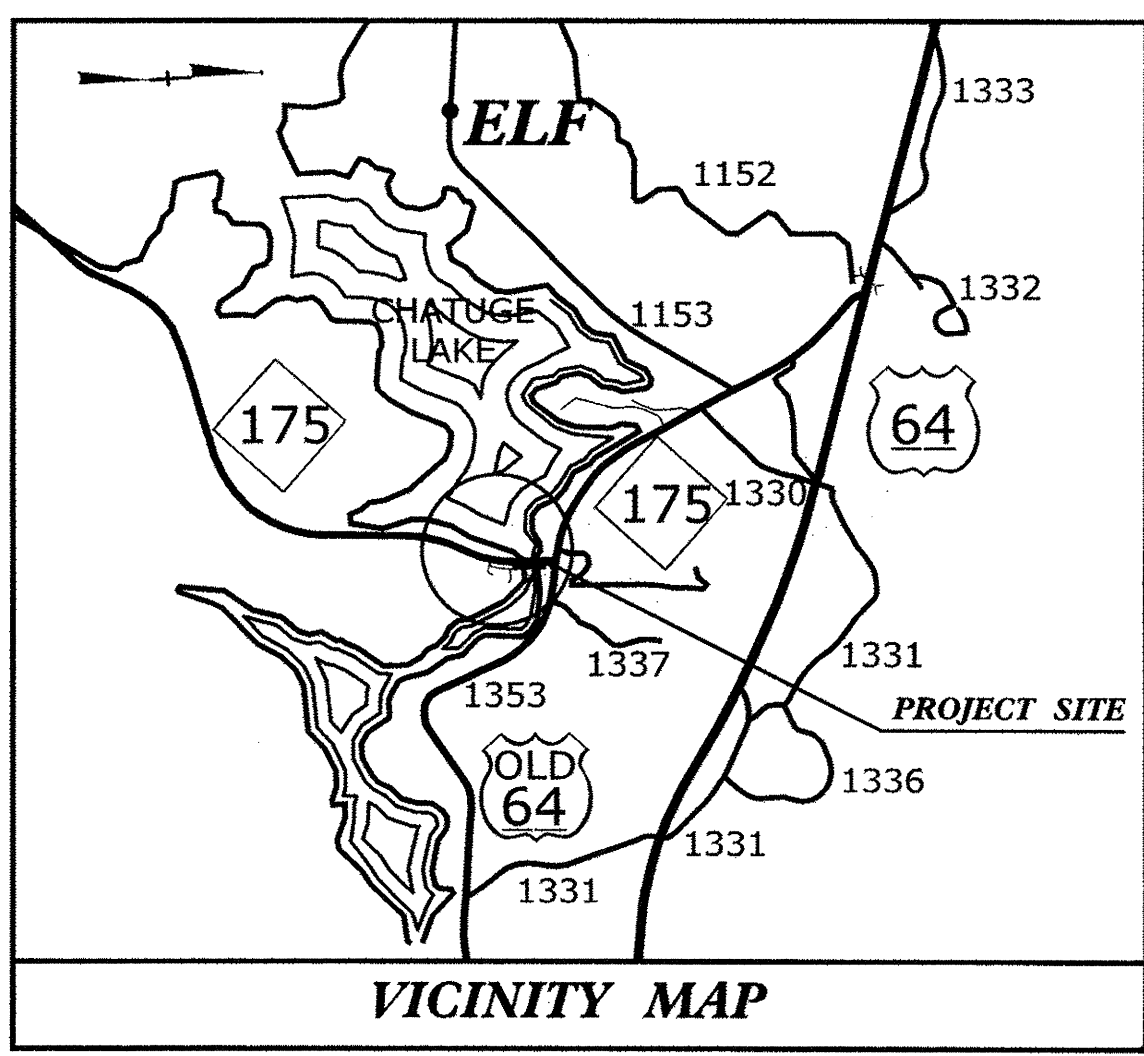
**UTILITY CONSTRUCTION PLANS
CLAY COUNTY**

LOCATION: BRIDGE NO. 11 OVER CHATUGE LAKE ON NC 175

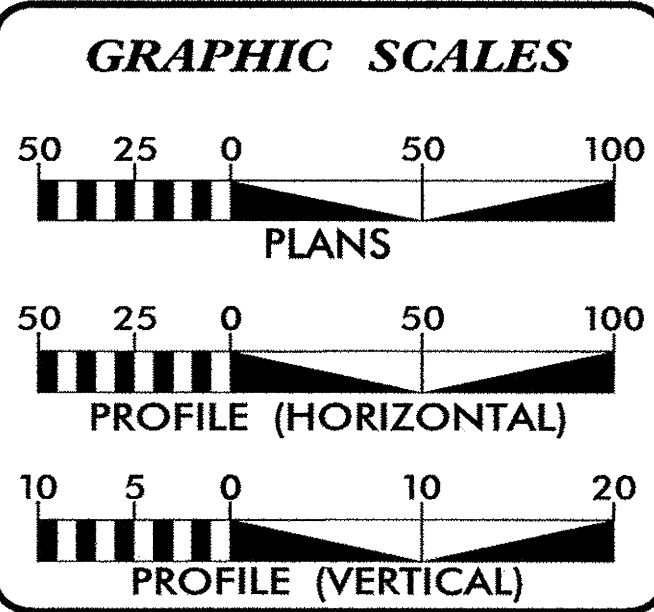
TYPE OF WORK: FORCE MAIN RELOCATION



TIP PROJECT: B-4733



PREPARED IN THE OFFICE OF:
Kimley-Horn and Associates, Inc.
P.O. BOX 33068 - RALEIGH, NORTH CAROLINA 27636-3068
PHONE: (919) 677-2000 FAX: (919) 677-2050 PE NO. F-0102



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UC-1	TITLE SHEET
UC-2	UTILITY PLAN SHEET SYMBOLOGY
UC-3	UTILITY CONSTRUCTION NOTES
UC-3A	PROJECT TYPICAL DETAILS
UC-4	UTILITY CONSTRUCTION SHEET
UC-5	PROFILE SHEET

WATER AND SEWER OWNERS ON PROJECT

(1) SEWER - Clay County Water and Sewer District

SEAL

PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

\$\$\$\$\$SYSTIME\$\$\$\$\$DGN\$\$\$\$\$USER\$\$\$\$\$

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

UTILITIES PLAN SHEET SYMBOLS

PROPOSED WATER SYMBOLS

Water Line (Sized as Shown)	----- 12" WL -----
11¼ Degree Bend	----- + + -----
22½ Degree Bend	----- + * -----
45 Degree Bend	----- + x -----
90 Degree Bend	----- + † -----
Plug	----- -----
Tee	----- + -----
Cross	----- + + -----
Reducer	----- > -----
Gate Valve	----- GV -----
Butterfly Valve	----- BV -----
Tapping Valve	----- TGV -----
Line Stop	----- LS -----
Line Stop with Bypass	----- LS/BP -----
Blow Off	----- BO -----
Fire Hydrant	----- PEH -----
Relocate Fire Hydrant	----- REH -----
Remove Fire Hydrant	----- REM FH -----
Water Meter	----- PWM -----
Relocate Water Meter	----- RWM -----
Remove Water Meter	----- REM WM -----
Water Pump Station	----- PST(W) -----
RPZ Backflow Preventer	----- PRPZ -----
DCV Backflow Preventer	----- PBFP -----
Relocate RPZ Backflow Preventer	----- RRPZ -----
Relocate DCV Backflow Preventer	----- RDBFP -----

PROPOSED SEWER SYMBOLS

Gravity Sewer Line (Sized as Shown)	----- 12" SS -----
Force Main Sewer Line (Sized as Shown)	----- 12" FSS -----
Manhole (Sized per Note)	----- • -----
Sewer Pump Station	----- PST(SS) -----

PROPOSED MISCELLANEOUS UTILITIES SYMBOLS

Power Pole	----- o -----
Telephone Pole	----- o -----
Joint Use Pole	----- o -----
Telephone Pedestal	----- TEL PED -----
Utility Line by Others (Type as Shown)	----- PROP O/H POW LINES -----
Trenchless Installation	----- 12" TL INSTALL -----
Encasement by Open Cut	----- 24" ENCAS BY OC -----
Encasement	----- 24" ENCASEMENT -----

Thrust Block	----- -----
Air Release Valve	----- AR -----
Utility Vault	----- UV -----
Concrete Pier	----- CP -----
Steel Pier	----- SP -----
Plan Note	----- NOTE -----
Pay Item Note	----- PAY ITEM -----

EXISTING UTILITIES SYMBOLS

Power Pole	----- • -----	*Underground Power Line	----- P -----
Telephone Pole	----- • -----	*Underground Telephone Cable	----- T -----
Joint Use Pole	----- • -----	*Underground Telephone Conduit	----- TC -----
Utility Pole	----- • -----	*Underground Fiber Optics Telephone Cable	----- T FO -----
Utility Pole with Base	----- □ -----	*Underground TV Cable	----- TV -----
H-Frame Pole	----- •-----	*Underground Fiber Optics TV Cable	----- TV FO -----
Power Transmission Line Tower	----- ☒ -----	*Underground Gas Pipeline	----- G -----
Water Manhole	----- ⊙ -----	Aboveground Gas Pipeline	----- A/G Gas -----
Power Manhole	----- ⊙ -----	*Underground Water Line	----- W -----
Telephone Manhole	----- ⊙ -----	Aboveground Water Line	----- A/G Water -----
Sanitary Sewer Manhole	----- ⊙ -----	*Underground Gravity Sanitary Sewer Line	----- SS -----
Hand Hole for Cable	----- □ -----	Aboveground Gravity Sanitary Sewer Line	----- A/G Sanitary Sewer -----
Power Transformer	----- ☒ -----	*Underground SS Forced Main Line	----- FSS -----
Telephone Pedestal	----- □ -----	Underground Unknown Utility Line	----- ?UL -----
CATV Pedestal	----- □ -----	SUE Test Hole	----- ⊙ -----
Gas Valve	----- ◇ -----	Water Meter	----- ⊙ -----
Gas Meter	----- ◇ -----	Water Valve	----- ⊙ -----
Located Miscellaneous Utility Object	----- ⊙ -----	Fire Hydrant	----- ◇ -----
Abandoned According to Utility Records	----- AATUR -----	Sanitary Sewer Cleanout	----- ⊙ -----
End of Information	----- E.O.I. -----		

*For Existing Utilities
 Utility Line Drawn from Record (Type as Shown) -----
 Designated Utility Line (Type as Shown) -----

5/14/99
 SYSTEMS DESIGN
 CONSULTANTS
 REV: 2/1/2012

5/14/99

UTILITY CONSTRUCTION NOTES

GENERAL NOTES:

1. THE PROPOSED UTILITY CONSTRUCTION SHALL MEET THE APPLICABLE REQUIREMENTS OF THE NC DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES" DATED JANUARY 2012.
2. THE EXISTING UTILITIES BELONG TO CLAY COUNTY WATER AND SEWER DISTRICT.
3. ALL SEWER LINES TO BE INSTALLED WITHIN COMPLIANCE OF THE RULES AND REGULATIONS OF THE NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES, DIVISION OF WATER QUALITY. PERFORM ALL WORK IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODES.
4. THE UTILITY OWNER OWNS THE EXISTING UTILITY FACILITIES AND WILL OWN THE NEW UTILITY FACILITIES AFTER ACCEPTANCE BY THE DEPARTMENT. THE DEPARTMENT OWNS THE CONSTRUCTION CONTRACT AND HAS ADMINISTRATIVE AUTHORITY. COMMUNICATIONS AND DECISIONS BETWEEN THE CONTRACTOR AND UTILITY OWNER ARE NOT BINDING UPON THE DEPARTMENT OR THIS CONTRACT UNLESS AUTHORIZED BY THE ENGINEER. AGREEMENTS BETWEEN THE UTILITY OWNER AND CONTRACTOR FOR THE WORK THAT IS NOT PART OF THIS CONTRACT OR IS SECONDARY TO THIS CONTRACT ARE ALLOWED, BUT ARE NOT BINDING UPON THE DEPARTMENT.
5. PROVIDE ACCESS FOR THE DEPARTMENT PERSONNEL AND THE OWNER'S REPRESENTATIVES TO ALL PHASES OF CONSTRUCTION. NOTIFY DEPARTMENT PERSONNEL AND THE UTILITY OWNER TWO WEEKS PRIOR TO COMMENCEMENT OF ANY WORK AND ONE WEEK PRIOR TO SERVICE INTERRUPTION. KEEP UTILITY OWNERS' REPRESENTATIVES INFORMED OF WORK PROGRESS AND PROVIDE OPPROTUNITY FOR INSPECTION OF CONSTRUCTION AND TESTING.

6. THE PLANS DEPICT THE BEST AVAILABLE INFORMATION FOR THE LOCATION, SIZE, AND TYPE OF MATERIAL FOR ALL EXISTING UTILITIES. MAKE INVESTIGATIONS FOR DETERMINING THE EXACT LOCATION, SIZE, AND TYPE MATERIAL OF THE EXISTING FACILITIES AS NECESSARY FOR THE CONSTRUCTION OF THE PROPOSED UTILITIES AND FOR AVOIDING DAMAGE TO EXISTING FACILITIES. REPAIR ANY DAMAGE INCURRED TO EXISTING FACILITIES TO THE ORIGINAL OR BETTER CONDITION AT NO ADDITIONAL COST TO THE DEPARTMENT.
7. MAKE FINAL CONNECTIONS OF THE NEW WORK TO THE EXISTING SYSTEM WHERE INDICATED ON THE PLANS, AS REQUIRED TO FIT THE ACTUAL CONDITIONS, OR AS DIRECTED.
8. MAKE CONNECTIONS BETWEEN EXISTING AND PROPOSED UTILITIES AT TIMES MOST CONVENIENT TO THE PUBLIC, WITHOUT ENDANGERING THE UTILITY SERVICE, AND IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. MAKE CONNECTIONS ON WEEKENDS, AT NIGHT, AND ON HOLIDAYS IF NECESSARY.
9. ALL UTILITY MATERIALS SHALL BE APPROVED PRIOR TO DELIVERY TO THE PROJECT. SEE 1500-7, " SUBMITTALS AND RECORDS" IN SECTION 1500 OF THE STANDARD SPECIFICATIONS.

PROJECT SPECIFIC NOTES:

1. PROPOSED FORCE MAIN FROM -FSS-1- STATION 10+00 TO -FSS-1- STATION 17+27.41 AND FROM -FSS-1- STATION 21+47.83 TO -FSS-1- STATION 22+04.23 SHALL BE D.I.R.J. (DUCTILE IRON RESTRAINED JOINT) PIPE, PC 350, CERAMIC EPOXY LINING (CALCIUM ALUMINATE IS NOT ALLOWED).

PROJECT REFERENCE NO. B-4733	SHEET NO. UC-3
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

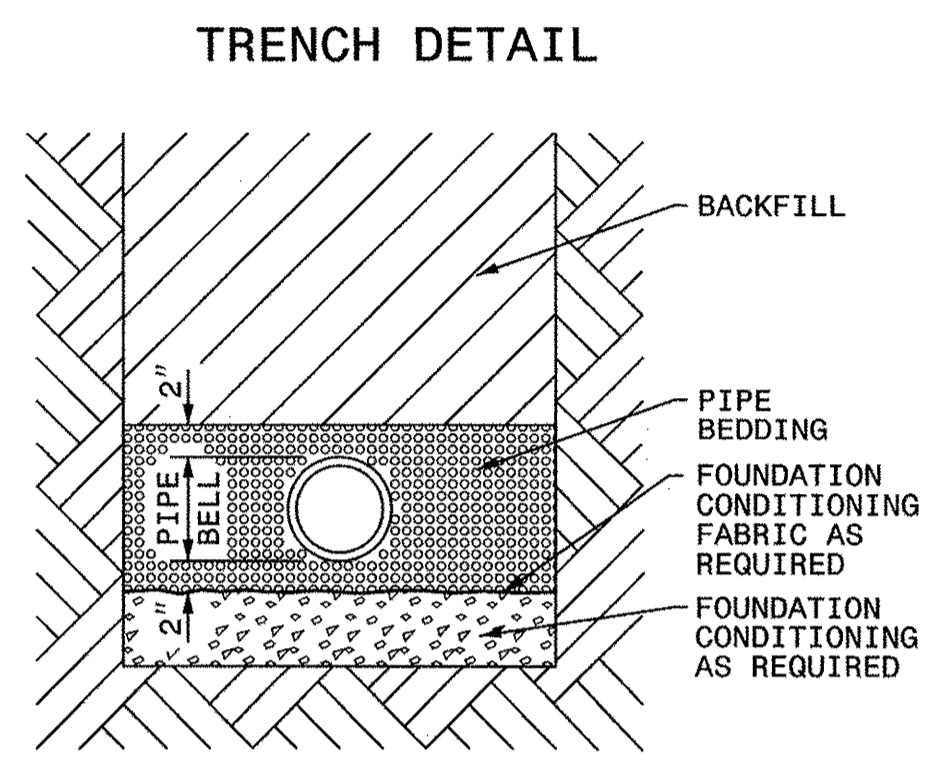
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5/14/99

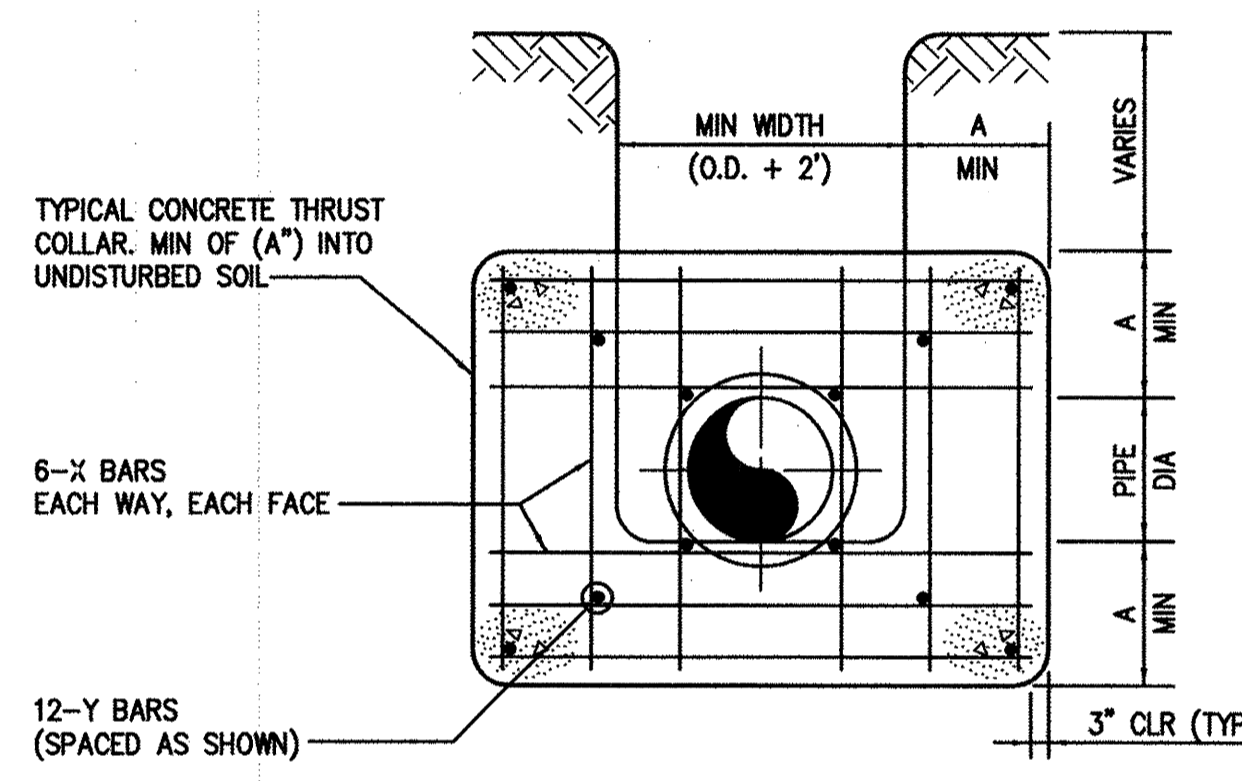
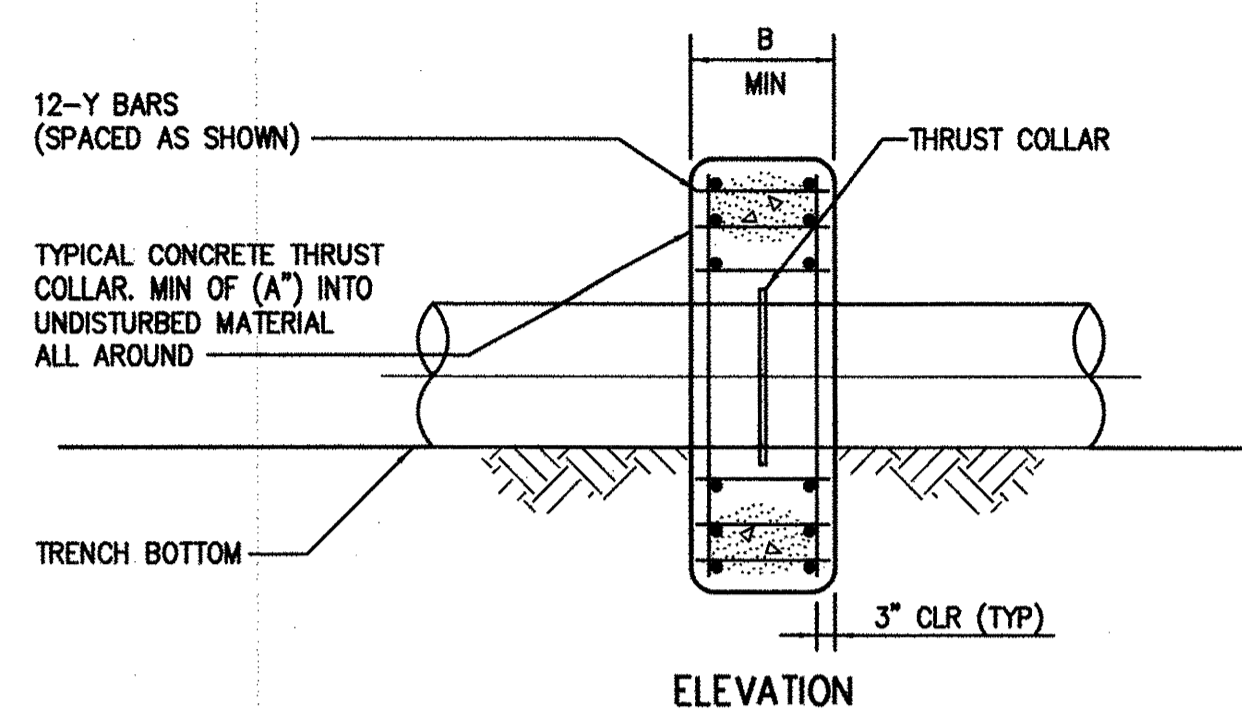
UTILITY CONSTRUCTION

PROJECT TYPICAL DETAILS

PROJECT REFERENCE NO. B-4733	SHEET NO. UC-3A
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SEC. PHONE: (919)707-6690 FAX: (919)250-4151	
UTILITY CONSTRUCTION PLANS ONLY	



PLACE FOUNDATION CONDITIONING MATERIAL BELOW BEDDING IF REQUIRED, AS DIRECTED BY ENGINEER. PIPE BEDDED IN SELECT MATERIAL, CLASS II (TYPE 1) OR CLASS III. TRENCH BACKFILLED IN LOOSE 6" LAYERS COMPACTED TO TOP OF TRENCH USING LOCAL EXCAVATED MATERIAL IF APPROVED BY THE ENGINEER, OR SELECT MATERIAL. ALL MATERIAL SHALL BE FREE OF ROCKS, FOREIGN MATERIAL, AND FROZEN EARTH. COMPACTION SHALL BE TO APPROXIMATELY 95% DENSITY IN ACCORDANCE WITH AASHTO T-99 AS MODIFIED BY THE DEPARTMENT OF TRANSPORTATION.

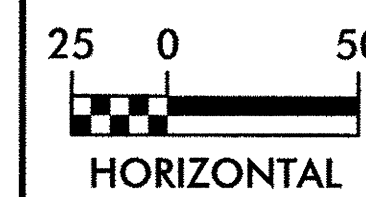


PIPE SIZE	X BARS	Y BARS	A	B
4"-36"	#5	#5	1'-4"	1'-7"
42" & >	#6	#6	1'-8"	1'-9"

0222119R

5/14/95

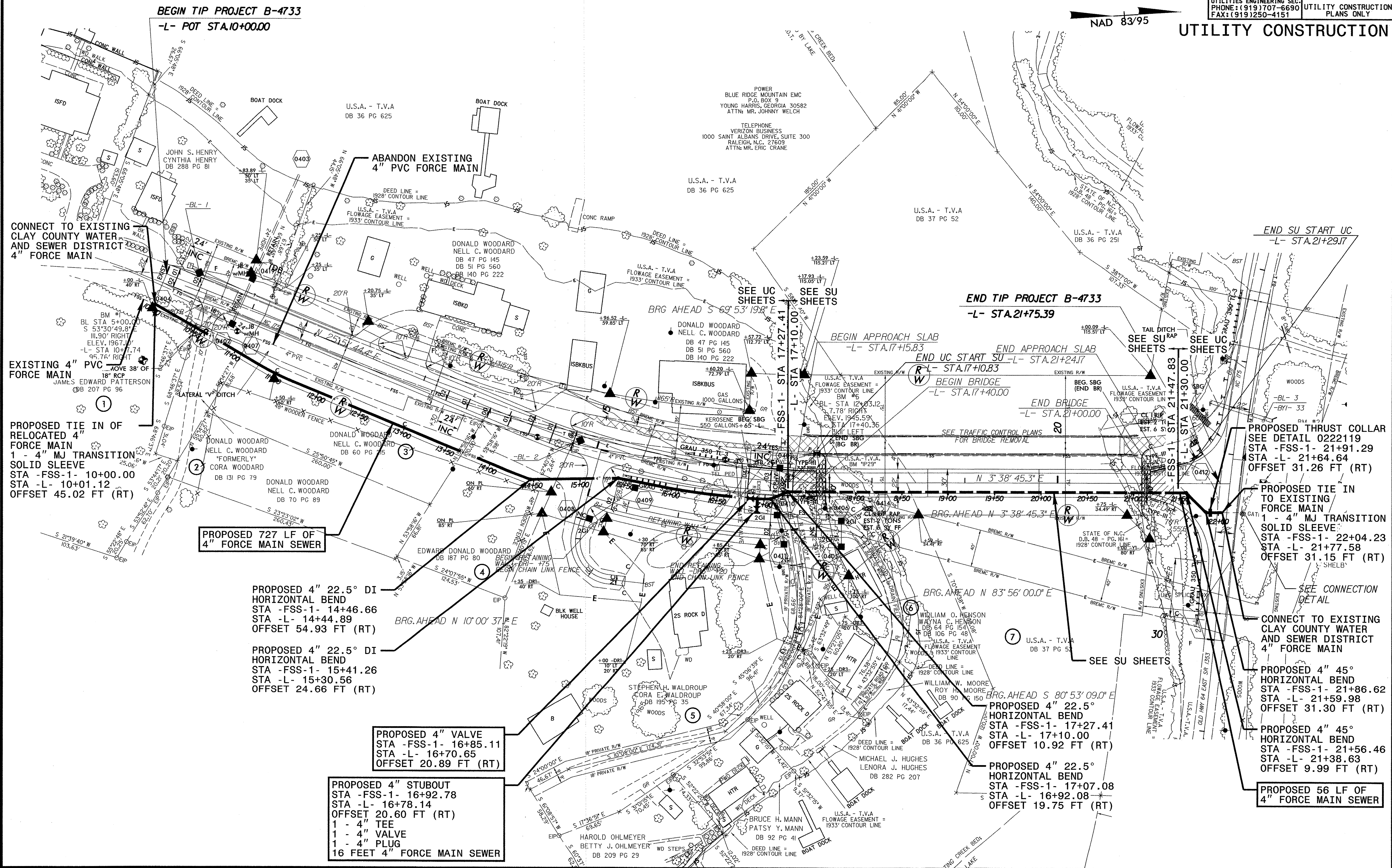
NOTES:
 1. ALL FORCE MAIN PIPE SHALL BE DI RJ PC 350, CERAMIC EPOXY LINING (CALCIUM ALUMINATE IS NOT ALLOWED).
 2. ALL VALVES SHALL BE RESILIENT SEAT GATE VALVES.



PROJECT REFERENCE NO. B-4733	SHEET NO. UC-04
DESIGNED BY: JJW	
DRAWN BY: JGB	
CHECKED BY: KFC	
APPROVED BY: KFC	
REVISED:	
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION UTILITIES ENGINEERING SECTION PHONE: (919) 707-6590 FAX: (919) 250-4151	
UTILITY CONSTRUCTION PLANS ONLY	

UTILITY CONSTRUCTION

NAD 83/95



BEGIN TIP PROJECT B-4733
 -L- POT STA.10+00.00

END TIP PROJECT B-4733
 -L- STA.21+75.39

END SU START UC
 -L- STA.21+29.17

CONNECT TO EXISTING CLAY COUNTY WATER AND SEWER DISTRICT 4" FORCE MAIN

ABANDON EXISTING 4" PVC FORCE MAIN

EXISTING 4" PVC FORCE MAIN
 MOVE 38' OF 18" RCP
 JAMES EDWARD PATTERSON DB 207 PG 96

PROPOSED TIE IN OF RELOCATED 4" FORCE MAIN
 1 - 4" MJ TRANSITION SOLID SLEEVE
 STA -FSS-1- 10+00.00
 STA -L- 10+01.12
 OFFSET 45.02 FT (RT)

PROPOSED 727 LF OF 4" FORCE MAIN SEWER

PROPOSED 4" 22.5° DI HORIZONTAL BEND
 STA -FSS-1- 14+46.66
 STA -L- 14+44.89
 OFFSET 54.93 FT (RT)

PROPOSED 4" 22.5° DI HORIZONTAL BEND
 STA -FSS-1- 15+41.26
 STA -L- 15+30.56
 OFFSET 24.66 FT (RT)

PROPOSED 4" VALVE
 STA -FSS-1- 16+85.11
 STA -L- 16+70.65
 OFFSET 20.89 FT (RT)

PROPOSED 4" STUBOUT
 STA -FSS-1- 16+92.78
 STA -L- 16+78.14
 OFFSET 20.60 FT (RT)
 1 - 4" TEE
 1 - 4" VALVE
 1 - 4" PLUG
 16 FEET 4" FORCE MAIN SEWER

PROPOSED 4" 22.5° HORIZONTAL BEND
 STA -FSS-1- 17+27.41
 STA -L- 17+10.00
 OFFSET 10.92 FT (RT)

PROPOSED 4" 22.5° HORIZONTAL BEND
 STA -FSS-1- 17+07.08
 STA -L- 16+92.08
 OFFSET 19.75 FT (RT)

PROPOSED THRUST COLLAR
 SEE DETAIL 0222119
 STA -FSS-1- 21+91.29
 STA -L- 21+64.64
 OFFSET 31.26 FT (RT)

PROPOSED TIE IN TO EXISTING FORCE MAIN
 1 - 4" MJ TRANSITION SOLID SLEEVE
 STA -FSS-1- 22+04.23
 STA -L- 21+77.58
 OFFSET 31.15 FT (RT)

CONNECT TO EXISTING CLAY COUNTY WATER AND SEWER DISTRICT 4" FORCE MAIN

PROPOSED 4" 45° HORIZONTAL BEND
 STA -FSS-1- 21+86.62
 STA -L- 21+59.98
 OFFSET 31.30 FT (RT)

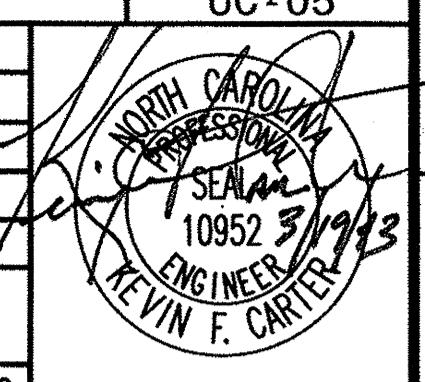
PROPOSED 4" 45° HORIZONTAL BEND
 STA -FSS-1- 21+56.46
 STA -L- 21+38.63
 OFFSET 9.99 FT (RT)

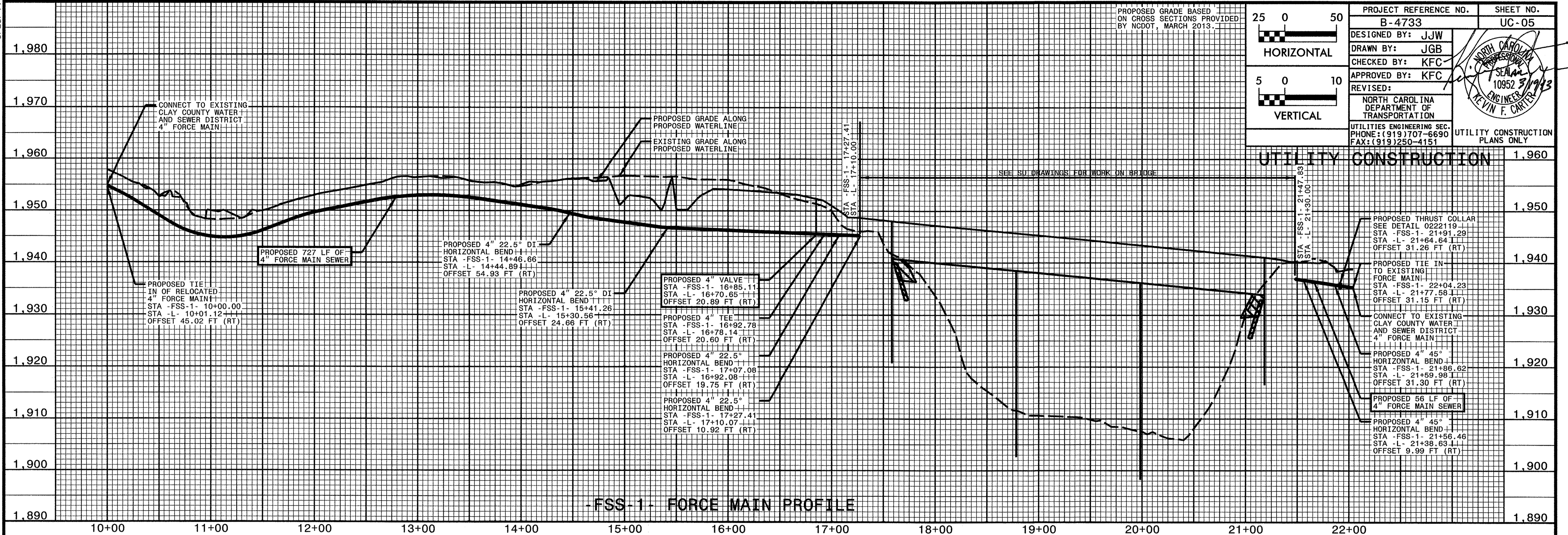
PROPOSED 56 LF OF 4" FORCE MAIN SEWER

SYSTEMS DESIGN CONSULTANTS
 10000 WOODBRIDGE DRIVE
 SUITE 100
 RALEIGH, NC 27609
 (919) 276-1000
 WWW.SDCON.COM

5/28/99

PROPOSED GRADE BASED ON CROSS SECTIONS PROVIDED BY NODOT, MARCH 2013.

25 0 50 HORIZONTAL	PROJECT REFERENCE NO. B-4733	SHEET NO. UC-05
5 0 10 VERTICAL	DESIGNED BY: JJW DRAWN BY: JGB CHECKED BY: KFC APPROVED BY: KFC REVISED:	
UTILITIES ENGINEERING SEC. PHONE: (919) 707-6690 FAX: (919) 250-4151		
UTILITY CONSTRUCTION PLANS ONLY		



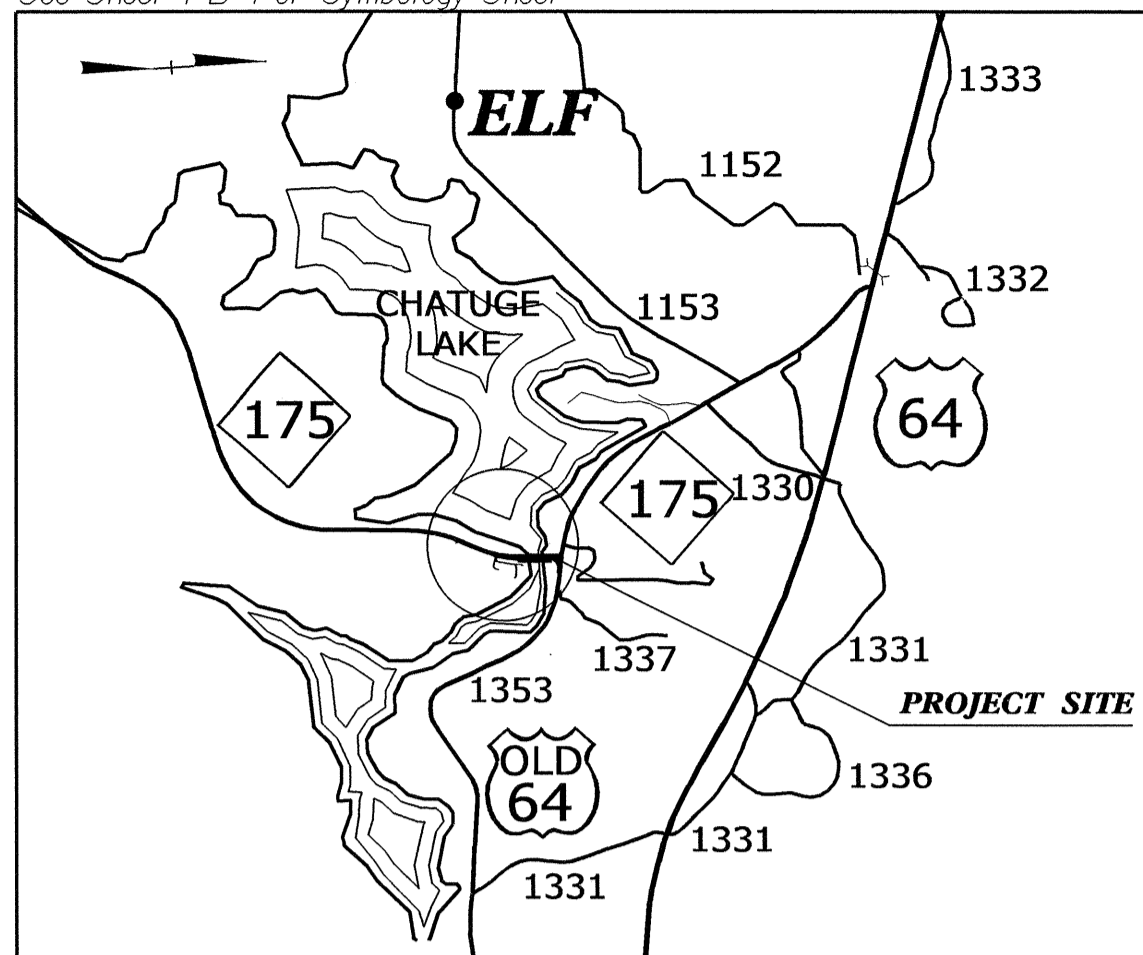
UTILITY CONSTRUCTION

- CONNECT TO EXISTING CLAY COUNTY WATER AND SEWER DISTRICT 4" FORCE MAIN
- PROPOSED GRADE ALONG PROPOSED WATERLINE
- EXISTING GRADE ALONG PROPOSED WATERLINE
- SEE SU DRAWINGS FOR WORK ON BRIDGE
- PROPOSED THRUST COLLAR SEE DETAIL 0222119
STA - FSS-1 - 21+91.29
STA - L - 21+64.84
OFFSET 31.26 FT (RT)
- PROPOSED TIE IN TO EXISTING FORCE MAIN
STA - FSS-1 - 22+04.23
STA - L - 21+77.58
OFFSET 31.15 FT (RT)
- CONNECT TO EXISTING CLAY COUNTY WATER AND SEWER DISTRICT 4" FORCE MAIN
- PROPOSED 4" 45° HORIZONTAL BEND
STA - FSS-1 - 21+86.62
STA - L - 21+59.98
OFFSET 31.30 FT (RT)
- PROPOSED 56 LF OF 4" FORCE MAIN SEWER
- PROPOSED 4" 45° HORIZONTAL BEND
STA - FSS-1 - 21+56.46
STA - L - 21+38.63
OFFSET 9.99 FT (RT)

SYTIME/CN/GR

09/08/99

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Symbology Sheet



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

**UTILITIES BY OTHERS PLANS
CLAY COUNTY**

LOCATION: BRIDGE NO. 11 OVER CHATUGE LAKE ON NC 175

TYPE OF WORK: ELECTRIC POWER, TELEPHONE, CATV

T.I.P. NO.	SHEET NO.
B-4733	UO-1

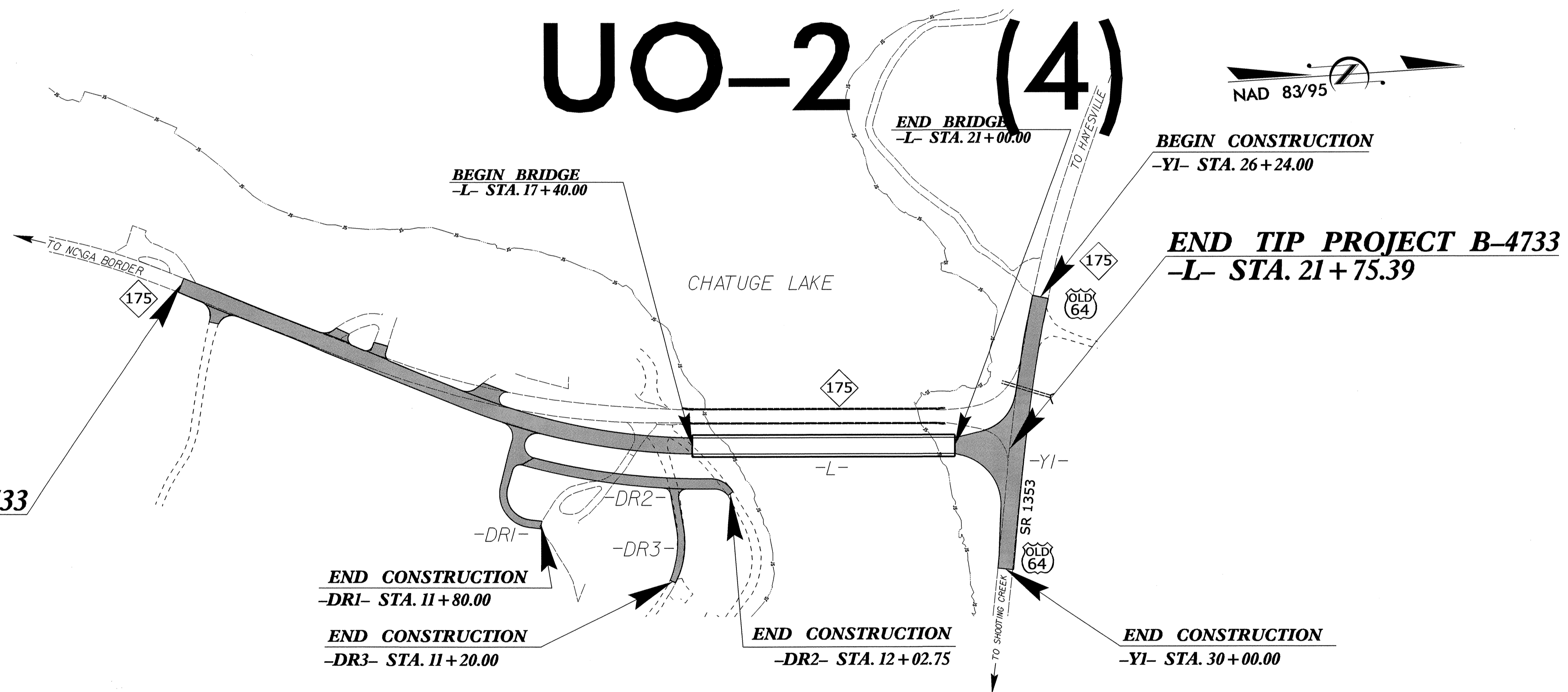


TIP PROJECT: B-4733

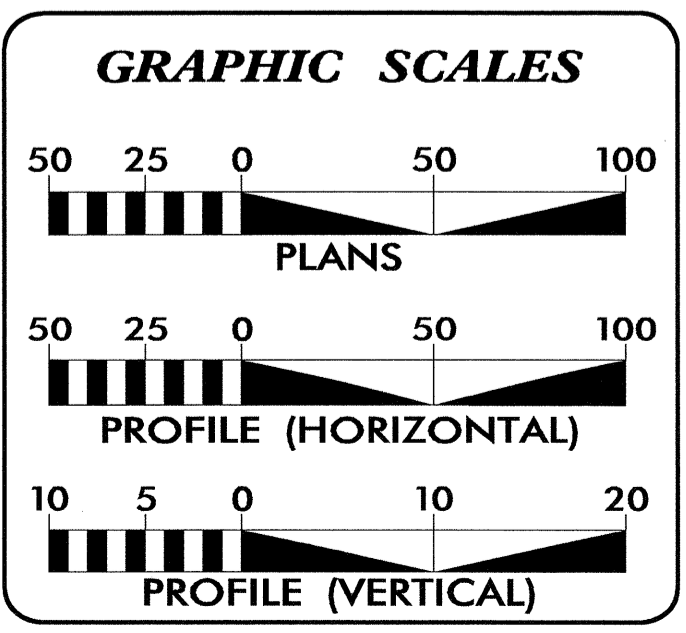
UO-2 (4)



BEGIN TIP PROJECT B-4733
-L- STA. 10+00.00



INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
UO-1	TITLE SHEET
UO-2	UTILITIES BY OTHERS PLAN SHEETS

- UTILITY OWNERS ON PROJECT**
- (1) Electric Power - Blue Ridge Mountain EMC
 - (2) Telephone - Frontier Communications
 - (3) CATV - Windstream
 - (4) CATV - BalsamWest FiberNET

PREPARED IN THE OFFICE OF:
**DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING**

1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
PHONE (919) 707-6690
FAX (919) 250-4151

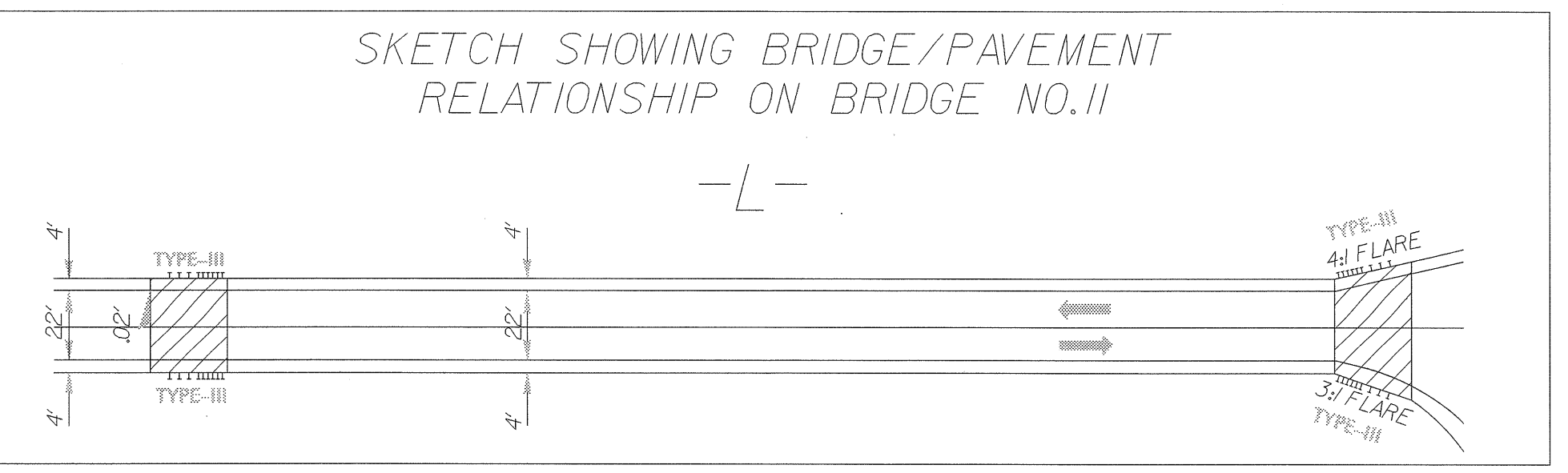
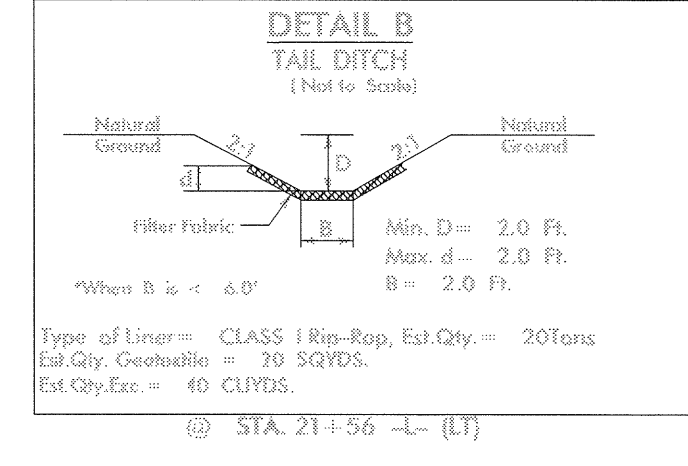
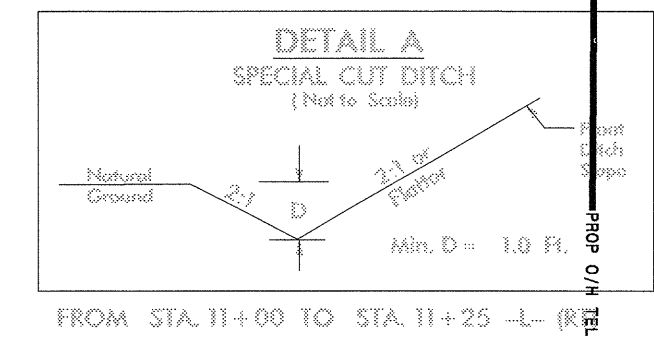
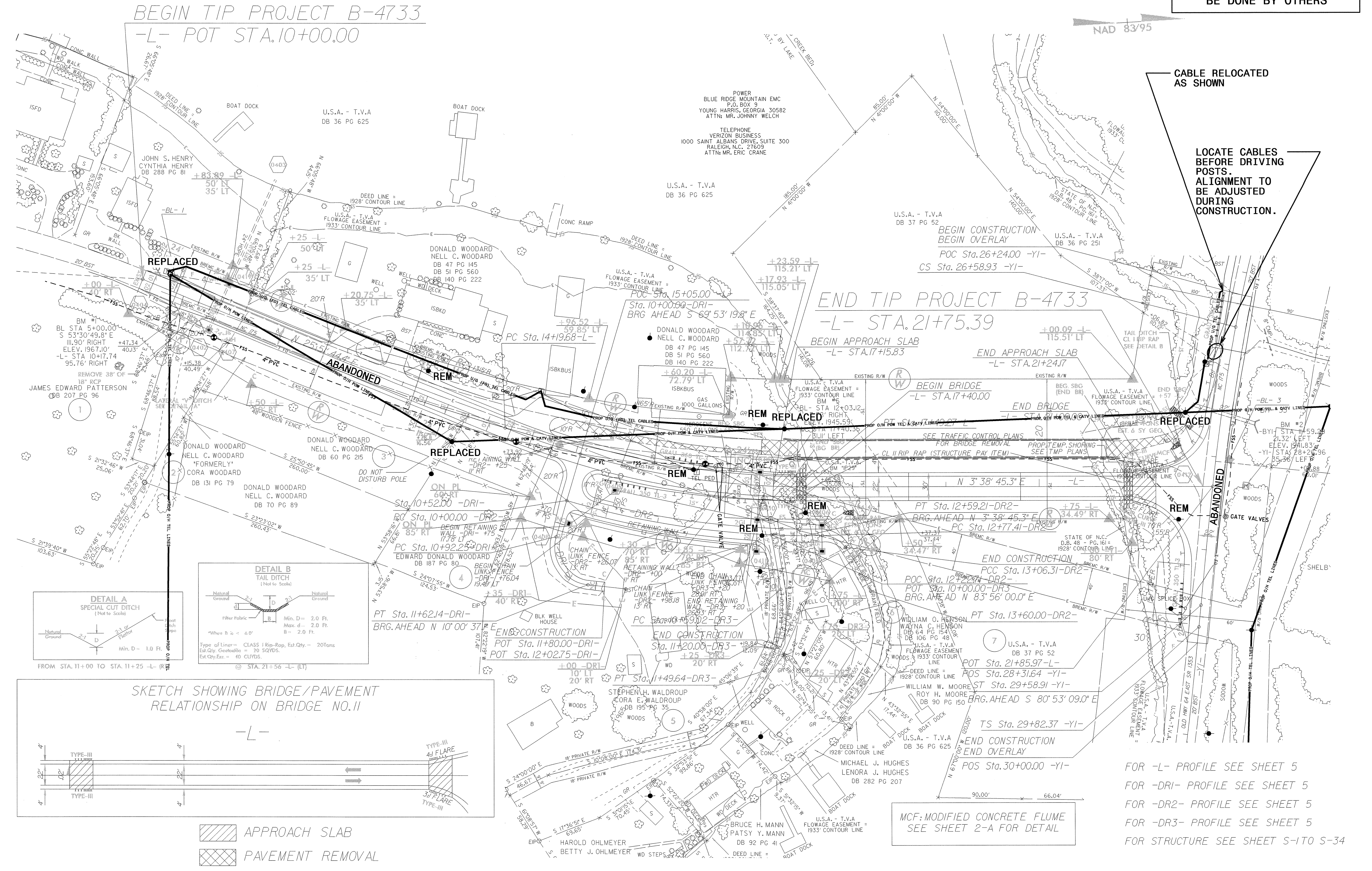
Roger Worthington, P.E. UTILITIES SECTION ENGINEER
Carl Barclay, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Bo Hemphill, P.E. UTILITIES PROJECT DESIGNER

05-MAR-2013 09:24
P:\UTILITIES\PROJECTS\UO-1\Proj\B4733\ut_title_uo1_psh.dgn
USER: [unreadable]

UTILITIES BY OTHERS

NOTE:
ALL PROPOSED UTILITY WORK SHOWN ON THIS SHEET WILL BE DONE BY OTHERS

-L-	-DRI-	-DR2-	-DR3-	-YI-
PI Sta 15+86.57 Δ = 22' 12" 59.1" (LT) D = 6' 44" 26.4" L = 329.59' T = 166.89' R = 850.00' SE = SEE PLANS RO = SEE PLANS	PI Sta 11+40.01 Δ = 100' 06" 03.1" (LT) D = 143' 14" 22.0" L = 69.88' T = 47.76' R = 40.00' SE = NC	PI Sta 11+30.50 Δ = 16' 27" 55.0" (LT) D = 6' 21" 07.5" L = 259.21' T = 130.50' R = 902.00' SE = NC	PI Sta 12+93.09 Δ = 55' 10" 56.2" (RT) D = 190' 59" 09.4" L = 28.89' T = 15.68' R = 330.00' SE = NC	PI Sta 13+33.21 Δ = 9' 19" 23.0" (RT) D = 17' 21" 44.5" L = 53.70' T = 26.91' R = 30.00' SE = NC
PI Sta 11+06.42 Δ = 41' 31" 58.4" (RT) D = 45' 50" 11.8" L = 90.61' T = 47.40' R = 125.00' SE = NC	PIs Sta 12+55.67 Δs = 5' 15" 03.8" Ls = 300.06' LT = 200.13' ST = 100.10'	PIs Sta 20+44.02 Δ = 45' 36" 59.0" (LT) D = 3' 30" 00.0" L = 1,303.32' T = 688.42' R = 1637.02'	PIs Sta 27+59.00 Δs = 5' 14" 58.8" Ls = 299.98' LT = 200.07' ST = 100.07'	PIs Sta 31+55.87 Δs = 7' 48" 00.0" Ls = 260.00' LT = 173.50' ST = 86.82'
PIs Sta 36+26.73 Δ = 43' 51" 00.5" (RT) D = 6' 00" 00.0" L = 730.84' T = 384.36' R = 954.93'	PIs Sta 40+60.01 Δs = 7' 47" 57.1" Ls = 259.98' LT = 173.49' ST = 86.81'			



APPROACH SLAB
 PAVEMENT REMOVAL

MCF: MODIFIED CONCRETE FLUME
SEE SHEET 2-A FOR DETAIL

FOR -L- PROFILE SEE SHEET 5
 FOR -DRI- PROFILE SEE SHEET 5
 FOR -DR2- PROFILE SEE SHEET 5
 FOR -DR3- PROFILE SEE SHEET 5
 FOR STRUCTURE SEE SHEET S-1 TO S-34

5/14/99
 20-MAR-2013 10:11
 Utilities-Reg-10-16-4733-ut-4-uo2-psh.dgn